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INVESTIGATION OF PROPORTIONAL COUNTERS

V. A. Trofimova
 Submitted 28 April 1949

[A brief digest of the above report follows.]

The author determines in this work the dependence of the coefficient of gaseous amplification on the place of incidence of the ionizing particles in the counter when the counter is filled with various gases; namely, for the following cases:

1. Number of alpha particles recorded versus amplification in a counter filled with argon, for $p = 40$ cm/Hg and $V = 1240$ v and for the two cases: (a) alpha source near the filament, and (b) alpha source near the cylinder.
2. Methane; $p = 40$ cm/Hg; $V = 1900$ v; source near filament or cylinder.
3. Propylene; $p = 10$ cm/Hg; $V = 750$ v; source near filament or cylinder.
4. Ethylene; $p = 10$ cm/Hg; $V = 600$ v; source near filament or cylinder.
5. Air; $p = 40$ cm/Hg; $V = 2500$ v.
6. Methyl vapors ($C_2H_6 \cdot (OH)_2$); $p = 10$ cm/Hg; $V = 950$ v; source near filament, or 12 cm from it. Radius of the counter 21 mm.
7. Mixture of argon (9 cm/Hg) and alcohol vapor (1 cm/Hg); $V = 760$ v; source near filament or cylinder.
8. The coefficient of gaseous amplification versus the location of the incident ionizing particles in an air-filled counter ($p = 40$ cm/Hg). A Po preparation is disposed at various distances (0 to 20 mm) from the center of the counter, to give varying coefficient.

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9. The distribution of alpha particles $w(n)$ with respect to initial ionization, for two cases: (a) source near filament and (b) source near cylinder.

Prof V. I. Veksler proposed the above work as the author's topic and assisted her in it.

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